

## **REMARKS**

Entry of the amendments is respectfully requested. Claims 1-31 and 43-45 are pending in the application. Claims 1, 3-7, 9, 12-20, 23, 25-31, 33, 36, and 41 have been amended. Claims 32 and 42 have been canceled. Claims 43-45 have been added. Claims 1-31, 33-41, and 43-45 therefore are pending and presented for review.

### **1. Confirmation of Election**

Applicant hereby confirms the earlier election of Group I, claims 1-31 and 33-41 for examination in the above-captioned patent application. Non-elected claims 32 and 42 have been cancelled without disclaimer or prejudice. Applicant reserves the right to file a divisional application for the subject matter of these claims at a later date.

### **2. Rejection Under 35 U.S.C. §112, second paragraph, and Technical Amendments**

Claims 1-31 stand rejected under 35 U.S.C. §112, second paragraph, because they recite a broad range within a narrower range. Specifically, the Examiner contends that claims 1 and 25 are indefinite for reciting the broad recitation “electric heater” and the narrower recitation “an auxiliary heating means” in the same claim. Applicant has now amended each of claims 1 and 25 to simply refer to “an auxiliary heater,” thereby obviating this rejection.

The claims have also been amended, where appropriate, to place them into better conformance with preferred USPTO practice and to use terminology that is consistent with that used in the specification. For instance, rather than referring to “elongated faces” and a “lateral

opening”, each of the independent claims has now been amended to recite “longitudinal faces” and an opening in a “lateral face.” This description is consistent with the “Summary of the Invention” portion of the application and the Detailed Description. Note, for instance, Figures 1-4, which show elongated longitudinal faces that bear the struts 9 and 10 and a lateral face that bears the opening 11 for receiving the resilient element 12. Similar clarifying limits have been made throughout the claims without altering their scope.

### **3. Rejections Based on the Prior Art**

Claims 33-40 stand rejected under 35 U.S.C. §102(b) as being anticipated by Yang. This rejection is respectfully traversed

#### **a. Recapitulation of the Invention<sup>1</sup>**

The invention relates to an auxiliary heating device having a layered structure of one or more PTC heating elements, radiator elements and contact sheets are kept in a clamp fit within a frame for increasing the efficiency of the heater. Due to clamping action a high electrical and thermal contacting of the PTC heating elements is achieved. In some cases, The clamping action is effected by resilient elements arranged within the layered structure. To enable the frame to absorb the resilient forces, it is made particularly stable from a mechanical point of view. When electric heaters with an exterior holding frame or exterior clamping action are assembled,

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<sup>1</sup> This Section 2a is intended to provide the Examiner with some background information on the state of the art and applicants' contribution to it. It is *not* intended to distinguish specific claims from the prior art. That task is performed in Section 2b below.

troublesome measures are needed for counteracting the contact pressure forces of the resilient means/frame that are objectionable during assembly.

An electric heater constructed in accordance the invention avoids these problems by separating the functions of frame and resilient elements from one another. The PTC heating elements, the radiator elements and the contact sheets are kept biased by a resilient element in a housing rather than a frame. The housing has openings on the longitudinal faces for allowing air to be heated to flow therethrough. Referring to Figs. 1-4 by way of example, the resilient elements 12 are provided in openings 11 in the lateral faces of the housing. This makes the manufacture of such a heater much easier because no special devices are needed for overcoming the resilient forces during assembly. The resilient elements 12 can instead be inserted into the housing when the assembled housing is capable of absorbing the forces produced by the resilient elements during compression of the layered structure. The resultant electric heaters can be used in many ways, particularly also in cases where the available constructional height is small.

#### **b. Traversal of Rejections**

Applicants respectfully traverse the above referenced rejections because the cited Yang reference, as discussed below, does not disclose each and every element of the novel subject matter as set forth in the claims.

For instance, the device disclosed in the Yang patent lacks the claimed openings in the lateral force of the housing.

The Yang patent discloses a heating apparatus that includes a housing 18 comprised of two half shells 1 and 2, and an array of linear arrays of PTC semiconductor heating elements 3 (Abstract and col. 2, lines 37-38). Conducting units 3a are disposed on opposite sides of each array of heating elements 3 (col. 2, lines 38-39). Each thermally and electrically conducting unit 3a includes a corrugate fin plate 5 disposed between two metal conducting plates 4, and resilient embedding plates 6 inserted between every neighboring conducting unit 3a (col. 2, lines 39-49). Each conducting plate 4 is provided with a terminal plate 71 that projects out of the housing to a power source 7 (col. 2, lines 53-58 and Fig. 2). Slits 14, 24 are provided in the housing 18 for the passage of the terminal plates 71.

The Examiner contends that the housing 18 has an opening for receiving the resilient element but fails to identify such an opening. Applicant asserts that no such opening exists. The sidewalls of the housing 18 are generally imperforate save for the slits 14 and 24. These slits 14 and 24 cannot be considered the claimed lateral opening because they cannot be considered “openings” in any accepted sense of that term. Nor can they receive the resilient plates 6 as claimed. As seen in Figure 3, the plates 6 are located with an offset to the slits 14, 24 such that insertion of the plates 6 into the housing 18 through the slits 14 and 24 is impossible. In addition, it can clearly be seen from Figure 5 that the slits 14 and 24 do not correspond in width to the internal structure held by the composed two half shells of the housing 8. The plates are instead simply placed between the two half shells prior to their interconnection. Any “opening” that

receives the resilient plates is not formed in a lateral face of the housing and, in any event, does not exist after assembly because it is fully enclosed by the half shells.

Therefore, reconsideration and allowance of claim 33 are believed to be in order and is respectfully requested.

Claims 33-40 are in condition for allowance for incorporating by reference the limitations of claim 32 and for reciting additional features of the invention which, when considered in combination with those of claim 32 are neither disclosed nor suggested by the cited Yang reference.

#### **4. Allowable Subject Matter, New Claims, and Conclusions**

The indication of the presence of allowable subject matter in claim 41 is noted with appreciation. Claim 41 has been rewritten in independent form to include the limitations of claims 33 and 40, from which it depended, and is now in *prima facie* condition for allowance. In addition, since the rejection of claims 1-31 under 35 U.S.C. §112, second paragraph, has been overcome by the amendments to claims 1 and 25, claims 1-31 are likewise believed to be in *prima facie* condition for allowance.

New claims 43-45 depend from claims 1, 25, and 32, respectively, and are believed to be in condition for allowance for incorporating the limitations of those claims by reference. These claims also specify that the claimed openings are enclosed around their entire perimeters thereof.

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Art Unit 3742 – Attorney Docket 127.019  
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A check in the amount of \$250 in payment of the fee by a large entity for the submission of 1 claim in excess of (\$50) and 1 independent claim in excess of 3 (\$200) is enclosed.

Authorization is given to charge any additional fees or credit any overpayment in connection with this or any future communication to Deposit Account No. 50-1170.

The Examiner is invited to contact the undersigned by telephone if it would help expedite matters.

Respectfully submitted,



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